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ORD-467-80

9 April 1980

MEMORANDUM FOR: Chief, Science and Technology Group
Office of the Comptroller

FROM: Philip K. Eckman
Director of Research and Development

SUBJECT: Production Decision Unit R&D Program
Review, 8 April 1980

1. A question was raised in our FY82 R&D program overview with regard to undertaking the D&E effort entitled VM Enhancements for Analyst, which is an outgrowth of the Information Processing for Analyst (IPANA) project. The view expressed implied this capability would be provided by the Host computer vendor, in this case IBM. Paragraphs 2 and 3 attempt to more clearly distinguish that capability normally provided by IBM to this environment and that to be developed by ORD. Paragraph 4 summarizes the objectives of the IPANA project. Paragraph 5 outlines the phases of the VM Enhancement for Analyst project. (U)

2. By way of background the bulk of CIA's computational needs are met by shared facilities operated by the Office of Data Processing. Most individual NFAC users access these services by means of the VM/CMS time sharing system developed and marketed by IBM. CMS provides a variety of packages and tools as well as remote access to other packages which run in the batch computing system. The available services include data base management, word processing, statistical analysis, interactive computing, and computer graphics. These services now operate more or less independently. An analyst who wants to extract data from a data base, operate on it with a statistical package, and graph the results now requires special programs to be written to get information from one package to the next. The lack of programmers to develop such links has been a serious barrier to effective use of existing computer resources. (S)

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3. The ORD effort is in support of NFAC analyst computational needs and will be largely defined during FY80 and 81, in ORD's Technical Development project entitled IPANA. A VM/CMS version of this design will be developed in FY82/83 concentrating on the need to integrate existing data analysis tools in such a way, that new capabilities can be added as they become available. An important capability to be incorporated in this design is the relational data base management system, which can serve as the central component of a data oriented, end user interactive system. ODP requirements will be met by designing a VM/CMS version of the analyst information processing system. The VM/CMS version will implement the functions of the general design most needed by current users of ODP time-sharing services. The system will take advantage of existing packages and capabilities of the time-sharing and batch systems whenever technically feasible. (S)

4. The main thrust of the on-going IPANA project is to define the analysis function in data processing terms and to design a conceptual system which fully supports the analysis function. IPANA will be validated by designing one of more partial implementations of the design. The first actual design will be based on the UNIX operating system. (U)

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5. The VM Enhancement to Analyst project phases will include 1) surveying existing system resources, 2) surveying requirements of current time sharing users, 3) identifying elements of the IPANA design which will be most useful to VM/CMS users, 4) assessing the difficulty of implementing desirable features, 5) doing a trade-off study to decide on the functions to implement, and 6) designing software to support the selected functions. Several possible implementation approaches will be investigated including 1) implementing the system as an interactive application program, 2) modifications of CMS, and 3) running a modified UNIX operating system under VM. (S)

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6. I hope the above information has clarified our intentions in undertaking the VM Enhancements for Analyst effort. The SAFE system will make an unprecedented amount of intelligence information available to the analyst. Real benefit of this to NFAC analysts will only be realized if a correspondingly set of powerful analyst tools are provided for inferencing, summarizing, correlating and building analytical models. That is the critical thrust of this effort. Please call if additional information is desired. (U)



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